Africa's employment challenge and the role of agriculture: is China a player?
A review of Chinese initiatives in rural Africa

Ward Anseeuw, Jean-Jacques Gabas and Bruno Losch

Over the last years African economies have been praised for their robust growth rates which offer positive perspectives for economic development and private investment and suggest a process of catching-up with the rest of the world. However, the quality of this growth is a growing issue because it has a very limited impact on poverty and does not translate so far in a progressive structural transformation of African economies.

Therefore, and due to a booming labor force, employment is becoming a burning issue where the question of the sectors of absorption of growing cohorts of youth challenges public policies. This employment challenge is recognized by the international community, as evidenced by the recent publication of numerous reference documents - such as the World Bank's World Development Report (WDR) 2013 focusing on employment (World Bank 2012) - and many of them focus on the very specific situation of Africa, and more precisely Sub-Saharan Africa (SSA), like the African Economic Outlook 2012 (AfdB et al. 2012) or the special report on African youth employment (Filmer & Fox 2014)[1].

The paper recapitulates first the specifics of African structural transformation, its consequences on the employment challenge and points the remaining and long lasting importance of the rural sector. It then puts in perspective the role of China and its impacts on the sector. Based on new evidence, it reviews Chinese interventions - investments and public aid – and stresses its limitations. The paper finally addresses the evolving role of Chinese cooperation in the rural sector and its uncertainties, between increasing implication in the policy dialogue or withdrawal towards a business-only perspective.

1/ The dramatic challenge of employment in SSA

SSA is very specific because its structural transformation has been lagging when compared to other regions of the world.[2] It has experienced rapid changes characterized by a huge process of urbanization over the last fifty years and a rapid economic growth in the last decade; but it remains, with South Asia, the poorest region in the world.[3] The "African lions" of McKinsey (2010) are lightened by 35% of their GDP when North Africa is subtracted; and SSA only represents 45% of the total wealth of the continent when South Africa (20% of the overall GDP) is withdrawn. It however gathers together 75% of its population.

An incipient economic transition

[1] See also the ILO report on employment trends for youth (ILO 2012), the report of the Africa Commission on the potential of African youth (Africa Commission 2009), the work of the FAO on the employment of rural youth (van der Geest 2010) and Brooks et al. (2013).

[2] The process of structural transformation refers to the change in the sectorial and spatial distribution of economic activities Its stylized summary shows a gradual transition from an agriculture-based economy to one based on industry and then on services, and hence from rural to urban areas. It is illustrated by the evolution pathway followed by European economies (and countries of European settlement) and replicated in several other parts of the world.

[3] The current GDP per capita is very low: in 2010, 27 of the 49 countries in SSA were in the low-income countries group by the World Bank (<to $ 1,025/person/year) including 13 countries under $ 500.

When looking at the major economic aggregates, SSA structurally changed little since the 1960s and remains permanently marked by the weight of its primary sector and the exploitation of its natural resources. Agriculture, mining and energy account for over 50% of GDP for 17 countries, between 40 and 50% for nine countries and between 30 and 40% for nine others. The manufacturing sector is extremely limited: only 18 countries have an industrial added value exceeding 10% of GDP and 7 countries reach the threshold of 15%. These results show a deep structural inertia, where only services and construction - driven by urban growth - developed. SSA is a region of urbanization without industrialization, a very specific situation in the economic history of the world.

When compared with East and South-East Asian competitors, African growth over the last decade was much lower, and especially marked by its volatility (Arbache & Page 2007), which raises the question of the sustainability of the recent growth trend (Devarajan & Fengler 2013), characterized by the position of raw materials, construction and services, and the relative weakness of investment (Ali & Dadush 2010).

However, when looking at reallocation of labor within or between sectors, even if reliable data are missing, some countries show a progressive shift (McMillan et al. 2013) due to the development of more diversified exports with higher value and technological contents (Uganda, Tanzania, Rwanda, but also Senegal or Nigeria). Nevertheless, these slight changes in the labor force structure of SSA do not modify - in absolute terms - the remaining importance of agriculture in the economically active population. With the exception of South Africa, where employment in agriculture is marginal - for reasons related to the very specific history of the country - agriculture still occupies 50-60% of the labor force in the vast majority of SSA. This rate rises to 75% and higher in some countries (Sahel, East Africa).[4] Other sectors of employment are mainly services (trade and transport first and, marginally, government, banking), construction and public works boosted by urban growth, and handicraft. Employment in manufacturing remains extremely low - a few hundred thousand jobs in most countries (and often less).

A cross-sectional feature of this employment structure is the importance of what is commonly called the informal economy. This informal sector is the bulk of Sub-Saharan African economies because it includes agriculture, which is almost exclusively family farming[5], and also because urban employment happens mainly through self-employment activities or small businesses.

An on-going and delayed demographic transition

These low-transforming African economies are facing a unique demographic reality characterized by an unprecedented growth and the long-lasting importance of their rural population. SSA is the last region of the world to be engaged in its process of demographic transition and the process is far from complete: in 2050, SSA's population should reach a total slightly above 2 billion people, and population should continue to grow until after 2100. SSA will overtake China and have two and a half times more people than Europe (a reversal of the relative weights of Europe and Africa in less than a century).

This population growth will also be accompanied by a change in the age structure of the population, with a strong growth of the labor force - and therefore of the demand for jobs - and a progressive improvement of the activity ratio (active/inactive people). However, this improvement in the activity structure of the population will only play its leverage role if it is combined with adequate public policies and a favorable economic and institutional environment (productive investment, capacity building, innovation and productivity enhancement). If not, the

[4] The broad definition of agricultural employment does not signify however exclusive occupation in agriculture: multiple activities are a characteristic of rural households (Losch et al. 2012).

[5] There is a limited business/corporate sector, mainly for agricultural export (agro-industrial plantations, large mechanised farms). It represents little in terms of jobs and even less in relative terms: in countries where it is best established (in East and Southern Africa in particular), the numbers rarely exceed 100,000 jobs compared to the millions of family farms.

demographic bonus (many workers) could turn into a "penalty" (many jobless) with major social and political tensions.

The other feature characterizing African demographic changes is the spatial distribution of the population. In spite of a strong urbanization process (the urban population increased tenfold since independence), the subcontinent is still mainly rural, with around 65% in 2010, and it will remain rural until the mid-2030s due to a slowing down in the pace of urbanization – a consequence of limited labor opportunities but low paid informal jobs. Above all, SSA is the only region of the world - with South Asia - where rural population will continue to grow – a consequence of today's spatial distribution and strong birth rates - and it is the only one where this growth will continue after 2050: the region will count 400 million additional rural people by that date.

The "African Equation"

SSA is facing a continuing population growth and a massive change in scale: while its population increased by 560 million people between 1970 and 2010, it will increase by 1.1 billion over the same time period between 2010 and 2050 (and possibly more). This means a dramatic "job challenge" (Bhorat & Naidoo 2013) which can be more accurately described when considering the yearly cohort of new workers entering the labor market[6]. At SSA's level, it means a yearly cohort of around 17 million which will increase and add up to 330 million by 2025 (i.e. nearly the current population of the United States). These are not projections: on a 15-year time period, these new workers have already been born. Based on the existing distribution of population and trends in migration to cities, two-thirds of these new workers should be in rural areas (Losch 2012, 2013).

These magnitudes in numbers allow to set down the African equation: with their undiversified economic structure, where the weight of primary and especially agricultural activities is dominant, where the weakness of industrialization does not offer mass employment alternatives, how will SSA economies absorb their booming labor force? What are the possible and realistic absorption sectors?

The debate is raging, with extremely contrasting points of view between proponents of industrialization and the strengthening of urban dynamics on the one hand, and proponents of "agriculture first" on the other hand. As far as the "industrialists" are concerned, only manufacturing can meet the scale of the challenges facing Africa: agricultural productivity is too low and the expected progresses too slow to allow for a rapid escape from poverty; the solution for the future of the rural poor lies in the cities.[7]

But it is also important to take into account the necessary timeframe for an effective industrial development with regard to the current structural situation. There has not been significant industrialization in SSA over the last fifty years despite significant urbanization. Examples of industrial free trade zones have produced mixed results and, most importantly, they have only helped create – depending on the country - tens of thousands of jobs whereas hundreds of thousands of jobs or millions are required annually. It means that the possible new comparative cost advantages - which will arise very progressively - are not enough: heavy investments are

[6] The annual cohort of workers entering the labor market, or reaching the age of finding an income-generating activity, is 1/10 of the 15-24 year age group. This is a flow instead of a change in the total number of workers, which takes into account people moving from the 15-64 age group to the supposedly inactive 65+ group (a disputable criteria in countries without a formal labor market and generalized pension system – the case of SSA).

[7] The major arguments for manufacturing refer to the change in the international economic environment that would offer new opportunities for industrialization: an improved business climate in many countries, the gradual increase in manufacturing costs in Asia due to higher wages (especially in China), and the prospects offered by task-based production - or light manufacturing (Dinh et al. 2012) - rather than the manufacture of end products (UNIDO 2008).

needed in infrastructure, training and support to businesses; and it will be impossible to create millions of industrial jobs each year in the near future to meet the demand for jobs.[8]

This situation consolidates the remaining role of agriculture and the rural sector in dealing with the employment challenge in the one or two decades to come. The strategic question today is to identify the right development model for agriculture in Africa. New investments by new players promoting large-scale farming have reopened the old "small vs. large scale" debate about the relative merits of different sizes and types of farms. This risky discussion – which could result in adopting inappropriate modernization pathways - tends to obscure a central issue: the need to increase production, while creating employment in agriculture, as well as in upstream and downstream activities, by strengthening value chains and improving the incomes of farmers - which are the levers of rural demand and economic diversification (Losch et al. 2012).

2/ China in rural Africa: myths and realities

In that specific context, what has been and what is the contribution of China, which is one of the most visible and scrutinized foreign player, to the development of the rural sector and therefore to the development of employment?

Data is scarce and often very contradictory, but what becomes more evident is that China's role in agriculture in Africa, and particularly related to the land grab phenomenon, is not as significant as initially put to the fore. As shown by the Land Matrix (2014), China would be ranked 6th if number of deals are concerned and only ranked about 15th if the area is considered (see Figure 1), making it not one of the major players and investors, without an offensive strategy, in agriculture and land on the continent (Anseeuw et al., 2012).

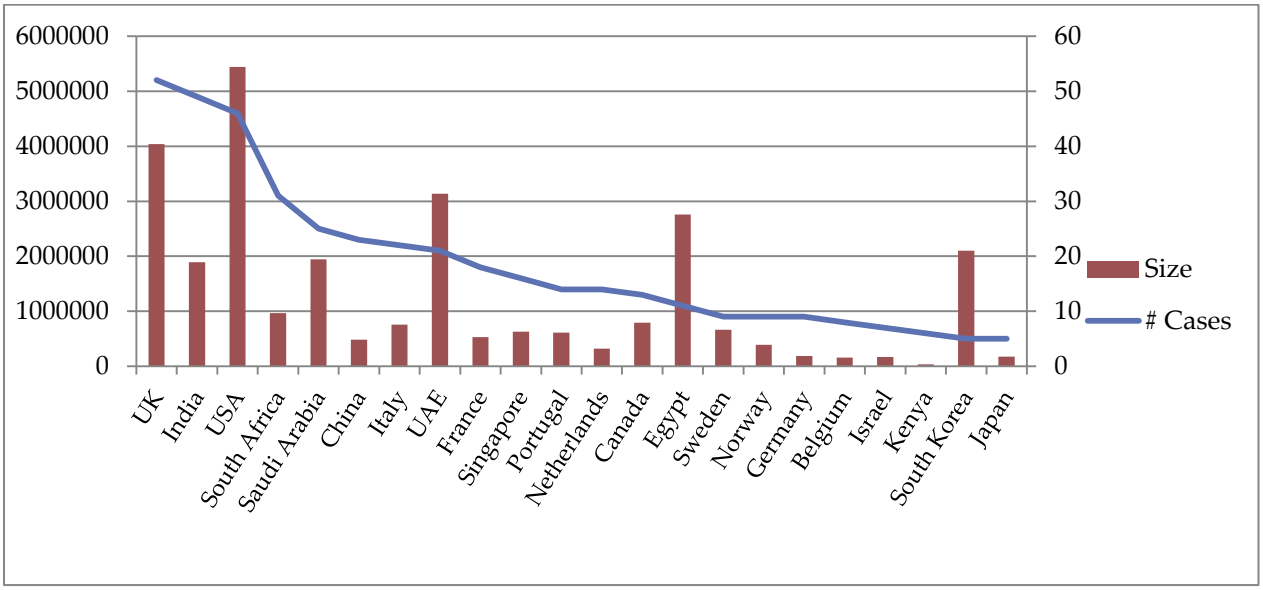

Figure 1: Countries of origin and large-scale land based investments, according to size and number of deals
Source: Land Matrix, 2014

This first observation is confirmed by China's foreign aid as detailed in its White Papers of 2011 and 2014. The amount of foreign aid allocated to agriculture remained and is at present

[8] In the case of China, the "township and villages enterprises" policy, which was the backbone of rural industrialization, is an interesting yardstick: between the 1960s, when the policy was initiated, and the 1990s a maximum of 135 million jobs were created (Vendryes 2012).

relatively low. Indeed, according to the White Paper of 2011, agriculture represented only 4.3% - i.e. $52.6 million for all developing countries - of the cumulated Chinese concessional loans until 2009. Although no disaggregated agricultural information is available for Africa, aid for the sector globally would account for about 2% between 2012 and 2014 (see Figures 2 and 3).[9]

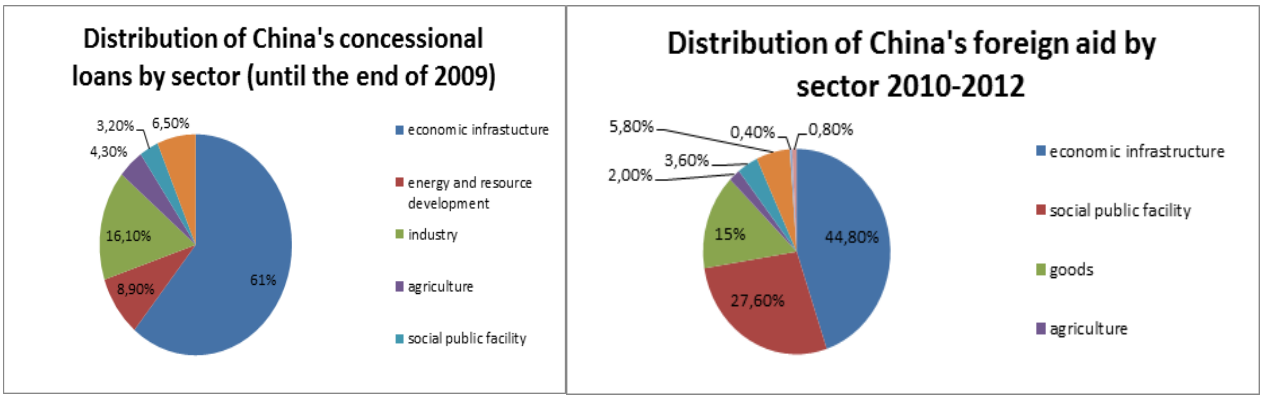

Figure 2 & 3: Breakdown of China's foreign aid by sectors
Sources: China's White Papers (2011 and 2014)

This being said, the multiple projects and actors, either public or private, implicated in China or on the ground in Africa, show that agriculture is certainly not being ignored by China. This is illustrated by the numerous projects mentioned in China's White Papers (2011 and 2014).[10]

Three models of cooperation can be identified.[11] The first one, representing the major cooperation model adopted by China, is related to China's agricultural demonstration centers, through which they tend to present a combination of "aid, business and "trade". As such, the model articulates itself around the Ministry of Commerce (MOFCOM – who is providing financial aid), Chinese provincial companies implementing the demonstration centers, and international trade with China which is developing with imports of (hybrid) seed, phytosanitary inputs, fertilizers, agricultural machinery - as well as, in certain cases, the export of agricultural produce. These centers are relatively young: they were decided during the 2006 Forum on China-Africa Cooperation (FOCAC) and financed at different paces. For the 25 centers planned, most constructions are engaged (offices, labs, post-harvest facilities, lecture rooms, etc.), additional rural development operations (irrigation systems, roads, etc.) have been initiated, and 10 centers are already effectively functioning (see annex). In these centers, experts often coming from a very same province per host country/center (for example Hubei in Mozambique) have been deployed, although effective capacity building and dissemination is still often lacking.[12] After the establishment (financed by MOFCOM), first experimentations and then capacity and dissemination phases (co-financed by MOFCOM and the host country research/capacity building bodies), subsequent phases focus on rendering the centers financially auto-sufficient and autonomous and, finally, on the transfer to host authorities. As such, these demonstration

[9] There is no disaggregated data for agriculture in Africa, knowing that China's foreign aid to Africa accounted for 46% of China's total aid in 2009 (China's White Paper, 2011) and even 52% ($7,7 billion) during the period 2010-2012 (China's White Paper, 2014)

[10] According to the two White Papers, agriculture has always been a target of Chinese cooperation. Until 2009, China implemented 221 projects focused on agriculture in developing countries: 35 farms, 47 centers of experimentation and development of agricultural technology, 11 livestock projects, 15 fishery projects, 47 irrigation projects, and 66 other unspecified agricultural projects – as well as supply of farm equipment. Between 2010 and 2012, China developed 49 new projects in agriculture: 25 agricultural demonstration centers, 21 irrigation projects, and 2 projects based on the transformation of agricultural products (Gabas, 2015).

[11] This analysis is based on a joint AFD-Cirad research project focusing on Western and Southern Africa which resulted in the development of a database of 250 public and private projects in agriculture financed by Chinese funds (Gabas, 2015).

[12] Number of experts is around 10 by center. In Mozambique, the "oldest" center, training and extension already started (with 10 staff), while operations will only start in 2015 in Cameroon (15 experts are expected).

centers characterize an effective but fragile cooperation tool because without Chinese Government support their financial sustainability is not guaranteed.[13] This cooperation model is also unclear. For example, in the case of Cameroon, capacity transfer activities are articulated with an investment company - *Shanxi Overseas* - which primary mandate is profit-generation but is also supposed to finance activities related to China's cooperation.

A second model is piloted by public/private enterprises[14] in charge of developing agricultural projects, such as *Sinochem* in Cameroon producing natural rubber, or *Sinto* in Togo producing sugar. Although not massive as it is in infrastructures, this project-based cooperation in agriculture is growing and is rapidly diversifying. Indeed, the interventions are presently focusing on an increasing number of agricultural sub-sectors responding to various market demands, whether they are Chinese (in particular for cotton, groundnut, cassava, wine), international (rubber), or local/regional in Africa (sugar, horticulture, rice, poultry, pork, fisheries). In the two cases mentioned here-above, both local economic development and the financing of local public goods are fully supported by the Chinese enterprises. Local employment is significant and Chinese foremen or managers have been replaced with local ones[15].

These two main cooperation models are finally accompanied by a wave of smaller, private, entrepreneurial investments, particularly in poultry and pork production, the stock-taking of which is obviously more difficult. These entrepreneurs also employ local labor, but the quantification of these dynamics and their impact on employment is still rather unknown.

Chinese engagement in agriculture in Africa is thus not as clear cut as often projected. Not only does it remain rather small, it varies significantly according to actors, sectors and activities. This is all the more true as China seems still unsure which cooperation model to engage in, leading the latter to vary rapidly. Indeed, firstly, although Chinese companies establish themselves to stay, several enterprises, judging risks and/or losses to significant, have lately decided to relocate their activities towards other countries, in Africa or beyond. It is the case of South Africa, where several Chinese companies recently settled into primary agricultural production (fishery, wine, cereal, fruits projects). Secondly, Chinese companies have adopted strategies allowing them to control production, without engaging in the riskier land based investments. As such, a large part of Zimbabwe's cotton and tobacco production is produced under contract farming agreements with Chinese companies, linking smallholders and Chinese companies (Mukwereza, 2013). Another strategy is centered on the acquisition of equity shares in stable companies and investment endeavours, as seen in some South African cooperatives and enterprises. This new approach allows Chinese companies to develop sector engagement and primary production control through the input and commercialization channels (Fraser and Anseeuw, 2014).

3/ The evolving role of China in the policy debate: from outsider to contributor?

This review and tentative stock-taking exercise of Chinese interventions in the rural sector provide a mixed picture.

First, agriculture is the poor part of Chinese cooperation: a very small amount of funds (even if regional breakdowns are not available) spread in many diversified projects, whose leverage power is necessarily limited.

[13] Principles, development, funding and replicability lack of evaluation.

[14] The distinction between the public or private character of these enterprises is difficult.

[15] In Togo, sugar cane company SINTO employs 280 people on a full time basis, but during harvest this can increase to 1200. In Cameroon, HEVECAM (whose capital is owned by SINOCHEM) employs about 6000 workers. SUDCAM, also owned by SINOCHEM, producing natural rubber presently on 4000ha but will expand to 32000ha by 2025, 96% of the employees are Cameroonian.

Second, China promotes an uncertain "aid, business and trade" model where the "business and trade" components seem to increasingly take the lead as shown by a growing activity of Chinese companies both on the inputs side (with development of seeds and fertilizers supply) and the product side (with development of purchase networks targeting specific products such as cotton, groundnuts and cassava for export).

Third, Chinese cooperation seems disconnected from the characteristics of the African context. The demonstration centers provide a good example of the tentative dissemination of a technical package directly inspired by the Green revolution, focusing on techniques and inputs without taking into account imperfect and incomplete factor markets, providing the latter and additional public goods only on limited project basis. China certainly does not engage in broad based reflections around the host country's broad-based development trajectories, in particular related to labour and labour absorption into agriculture. The few isolated projects are certainly not leading to broad-based structural transformation and do not have the aim to absorb Africa's surplus labour, neither has the model that is promoted.

Lastly, China's cooperation system seems to be fully blind on the ground and to be working in isolation without any consultation with other donors or local stakeholders, such as rural producers' organizations or NGOs. This gap with other players has prevented experience and information sharing, adaptation to local realities and undermines Chinese aid effectiveness and its contribution to major African challenges. In a context where donors are progressively reengaging in support to policy making processes, following a growing focus of African institutions on strategies – and a rising concern about implementing a "transformative agenda" (e.g. African Union, AfDB, and ECA) – Chinese cooperation could possibly initiate a progressive implication in support to policies. This move would be a major shift with regard to a long-lasting positioning favoring non-interference. This possible evolution is demonstrated by the implication of Chinese experts in agriculture policy design like in Benin, Botswana and Bissau Guinea. A similar development is observed in Mauritania, where experts contributed to the development of a research center dedicated to agricultural policy, or in Senegal where technical assistance is provided to the ministry of agriculture. Lately, at an international level, it has also engaged in a dialogue with other official donors over the last years, mainly multilateral channels. This is particularly with FAO, the World Bank and IFAD, with whom trilateral cooperations are being established in countries such as Mozambique and Cameroon. Other cooperations are within the BRICS group (with the establishment of an international bank) or through China's implication in DAC/OECD working groups.

Annex

The 25 agricultural demonstration centers in Africa

Country	**Chinese company**	**Development stage**	**Size**
South Africa	*China National Agricultural Development Group*	January 2011 delivered	Facility of 3.000 m^2
Angola	*Xinjiang Beixin Group*	October 2012 signed agreement	54 hectares
Benin	*China National Agricultural Development Group*	February 2010 building achieved	51.6 hectares
Cameroon	*Shannxi Agriculture Group (*initially *Shannxi Overseas Investment)*	January 2010 building achieved	100 hectares
CAR	*China Shanxi International Economic & Technical Cooperation Corp*.	December 2012 building started	To be decided
Congo	*Chinese Academy of Tropical Agricultural Science*	March 2011	To be decided
Côte d'Ivoire	Undefined	February 2012 feasibility study	To be decided
Eritrea	Undefined	feasibility study	To be decided
Ethiopia	*Guangxi Bagui Agricultural Technology Ltd.*	June 2012 Delivered	52 hectares
Equatorial Guinea	*Jiangxi Ganliang Industrial Ltd*.	No data	No data
Liberia	*LongPing High-Tech Group*	July 2010 Delivered	Facility of 26.000 m^2
Madagascar	*Hunan Academy of Agricultural Science*	No data	No data
Malawi	*Qingdao Ruichang Cotton Company*	July 2012 building in progress	50 hectares
Mali	*Jiangsu Redbud Spinning Technology Ltd*.	July 2012 building in progress	No data
Mauritania (agricultural center)	*Mudanjiang Yanlin Farm Technology Ltd.*	November 2012 building started	50 hectares
Mauritania (livestock center)	Undefined	feasibility study	To be decided
Mozambique	*Hubei Lianfeng Overseas Agricultural* Development Ltd.	July 2011 Delivered	52 hectares
Uganda	*Sichuan Huaqiao Phoenix Group Ltd*.	December 2010	Facility of 3.000 m^2
DRC	*Zonergy Company Limited*	July 2012 building in progress	60 hectares
Rwanda	*Fujian Agricultural & Forestry University*	August 2011	22.6 hectares
Sudan	*China Shandong International Economic & Technical Cooperation Group Ltd.* *Shandong Academy of Agricultural Sciences*	June 2011 Delivered	65 hectares

Tanzania	*Chongqing Zhongyi Seed Co. Ltd*.	April 2011 Delivered	62 hectares
Togo	*Jiangxi Huachang Infrastructure Ltd*.	April 2012 Delivered	10 hectares
Zambia	*Jilin Agricultural University*	January 2011 Delivered	120 hectares
Zimbabwe	*Chinese Academy of Agricultural Mechanization Sciences*	Avril 2012	109 hectares

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